

## **INFORMATION RESOURCES FOR MARINE AND AQUATIC SCIENCES RESEARCH IN TRINIDAD AND TOBAGO**

**Sharida Hosein**

The University of the West Indies  
Campus Libraries  
St Augustine, Trinidad and Tobago. West Indies

**ABSTRACT:** Trinidad and Tobago is a twin island state situated in the Southern Caribbean where there is a strong tradition of research in all aspects of Marine and Aquatic Sciences. Much of this research in recent times has focused on different aspects of pollution and environmental degradation of offshore and inland waters because of the importance of the petroleum industries and agriculture. There has also been a lot of research on fish stocks, commercial species and aquaculture. The three main Institutions responsible for this research are The University of the West Indies, the Institute of Marine Affairs and the Fisheries Division of the Ministry of Food Production and Marine Resources.

This paper discusses the information resources available to researchers in this area, from the largely print based sources in the past to the more recent digital and online resources now being provided by the libraries and information centres of these organisations. Some of the initiatives in and challenges of acquiring and providing electronic information are outlined.

### **Introduction**

The Republic of Trinidad and Tobago is an archipelagic state, which includes the islands of Trinidad and Tobago; smaller islands off the northeast coast of Tobago; the Five Islands and other smaller islands, which lie between the north west coast of Trinidad and the Peninsula de Paria in Venezuela. The marine area over which the state has sovereignty or jurisdiction comprises a total sea area of some 75,000 square kilometres. These areas are bordered by the waters of neighbouring countries, Venezuela, Grenada and Barbados. Trinidad and Tobago has a combined area of 5128 km<sup>2</sup>. Trinidad is separated from Venezuela at its nearest points by about 13 kilometres, and from Tobago by 32 kilometres.



Fig 1. Location map of Trinidad and Tobago

Its marine ecosystems are much influenced by Orinoco River discharge, which delivers land-derived nutrients and sediments, which support significant fisheries resources. In addition to its marine ecosystems Trinidad has significant freshwater ecosystems with small-scale inland fisheries, including several aquaculture operations. Marine and aquatic sciences have therefore been important areas of research in this country. The 3 main institutions responsible for this research are the Institute of Marine Affairs (IMA), the Fisheries Division of the Ministry of Agriculture (FD) and the Department of Life Sciences (DLS) of the University of the West Indies.

#### **The Institute of Marine Affairs**

The IMA is a multi-disciplinary marine and environmental related research institution located in the northwestern peninsula of Trinidad. It was established in 1978 to conduct fundamental and applied research in marine affairs, to make the results of such research available to the Government for the formulation of coherent and consistent policies in the conservation and management of the country's marine resources, and to respond to the general needs for information and collection with all sectors of Trinidad and Tobago and the wider Caribbean.

Research at the IMA is conducted under the following programmes that reflect specific tasks and activities related to the systematic investigations of coastal zones, inland waterways and rivers, near-shore waters and the Exclusive Economic Zone (EEZ). These programmes are:

Fisheries and Aquaculture  
Environmental Research  
Legal Research  
Marine Chemistry  
Technical Advisory Services.

The research groups are supported by the Information Centre, which provides information resources to aid researchers, and the Information Technology Department, which utilises Remote Sensing, Geographic Information Systems and Data Management in support of research carried out by the Institute. IMA (1999).

### **Fisheries Division**

The mission of the FD is to manage the sustainable development of the fisheries sector of Trinidad and Tobago while considering the environment and incorporating the principles of responsible fisheries. As well as administering the provision of support services to the fishing industry, the FD is one of the leading organisations for the collection and analysis of fisheries data and information.

The main areas of research are in stock assessment and management for shrimp, fish and shark resources. The FD is also involved in assessment and monitoring of large migratory pelagics and highly migratory and straddling fish stocks. Some of the information collected relates to landing data, biological data and vessel censuses. Research is also conducted in coastal zone management especially in the Gulf of Paria area and bio economic assessments of the status of resources in the sea. FD (n.d.)

### **The University of the West Indies, Department of Life Sciences**

Research into aquatic and marine sciences is mainly done by the DLS of the Faculty of Science and Agriculture. However some research projects have a multi-disciplinary approach and other departments/faculties such as Engineering can become involved. A survey of theses covering these topics for the past 20 years shows the following subjects as areas of research:

Aquaculture/Mariculture  
Ecology of the marine and aquatic environment  
Geological aspects  
Species identification  
Engineering  
Fisheries management

Pollution of waterways and the marine environment  
Biochemistry of marine organisms  
Socio-economic and bio economic analysis  
Oceanography

### **Information Resources of these Institutions**

In each of these organisations there are Information Centres or Libraries, which collect, manage and disseminate information resources to the respective researchers.

The Information Centre of the IMA manages the information resources for the benefit of its staff and also provides information and education services to the wider user community locally, regionally and internationally. Its facilities include the library, which collects, organises and conserves publications; the Information and Documentation services which responds to enquiries, assists users in finding information and processes information for a variety of users; the Marine Education Centre which is dedicated to the promotion of greater public understanding and appreciation for all aspects of the marine and related environment and the Drawing and Printing office which prepares charts, graphic representations and documents for publication. IMA (1999)

The FD information service consists of a specialised library and electronic fisheries databases, which have been developed in-house to support the FD's research and management responsibilities. These information resources are also offered to the public. The Library contains approximately 4,000 texts, 5,000 reports, serials and other documents. Major topics covered include fisheries assessment and management, fisheries legislation, fishery research, fish handling and field data. FD (n.d.)

The main goal of Library of the University of the West Indies is to support the teaching and research programmes of the University. The collection therefore reflects the information resources needed by the user community for their teaching and research. This consists of relevant texts, essential reading materials, serials publications, abstracts and indexes and also databases specific to Marine and Aquatic Sciences. There are also Audio-visual materials related to this area of teaching and research. The Library's information resources are primarily dedicated to supporting the information needs of the university community but it also answers enquiries from external users locally, regionally and internationally, whether individuals or organisations.

### **Bridging the Digital Divide?**

This section describes some of the initiatives undertaken by these institutions to provide their information in electronic formats and to give their user communities access to external information resources.

Each of these three institutions has attempted and has been successful in creating and maintaining electronic versions of its collections. For both the IMA and the FD databases of their catalogues have been created and are available at the Information Centres on the Intranet. At the U.W.I. Library the catalogue is online from their web site via the Internet. In addition to the catalogues each Institution has unique collections for which databases have been created. Some of these include:

At the IMA

MARIMA - the library catalogue consisting of books, reports and articles indexed from journals.

THETIS – a database of reprints

IOC – Collection of publications from the Intergovernmental Oceanographic Commission, the IMA is a depository for this organisation

CAROC/TOCMO – Publications on Caribbean Oceanography and Caribbean Marine Taxonomy.

At the FD there is FISMIS – Fisheries Management Information System consisting of the following databases:

CRUISE – an inventory of fishery and oceanographic cruises conducted in the Caribbean region.

GULP – consolidates all existing information on the Gulf of Paria (Trinidad and Tobago) and the associated coastal zone. Consists of journal articles, monographs, conference proceedings, theses, “grey literature” etc.

STOCK – A comprehensive database on the commercial marine species, fisheries and oceanography of Trinidad and Tobago and the adjacent region.

At the U.W.I. Library

Apart from the library catalogue there is CARINDEX – Science and Technology, which is a database of abstracts of publications coming out of the University and other related institutions. It includes theses, conference proceedings, serial articles and reports.

The three institutions also subscribe to CD-ROM databases such as ASFA. In addition the U.W.I. Library has online access to CSA Life Sciences, and Biological Abstracts as well as many other databases that will have information relevant to Marine and Aquatic Sciences.

To increase access to the information resources of other institutions the IMA promotes networking through participation in Regional and International projects. Some of these are:

CEPNET – the project for strengthening the capabilities for managing coastal and marine environmental resources in the wider Caribbean region.

CCOSNET – the Caribbean Community Ocean Sciences Network, a network of Caribbean marine related research institutions established in 1990 by CARICOM.

ODINCARSA - a regional project of Caribbean and South America Regions working together in an established network of ocean data and information centres providing services and products for users, researchers, students, the private sector and the general public.

Both the IMA and FD contribute to CFRAMP – the CARICOM Fisheries Resource Assessment and Management Programme. Its purpose is to enhance the basic information and institutional capacity necessary to manage and develop the fisheries in the CARICOM region.

To increase access to digital information for its users, the University Library has been investing heavily in electronic resources, such as databases, electronic journals and electronic books. The focus has been largely in science and technology and for the next year the emphasis will be on full text resources. There are also digitisation projects ongoing and it is hoped that a lot of our unique Caribbean materials in all subject areas will eventually be available in digital formats. The Library also belongs to regional and international information networks such as SIDALC, AGRIS and AGLINET where information resources are shared among the participants.

This then has been an overview of the situation in Trinidad and Tobago as it relates to information resources for research in Aquatic and Marine sciences. The information centres and libraries are trying to bridge the digital divide and give their researchers access to the latest information available in whatever format to assist them in carrying out their work. We face the challenges common to developing countries, such as inadequate financial resources, slow online connections because of low bandwidth, restrictive licence agreements with vendors and publishers with regard to access to electronic information etc. In spite of these constraints the organisations are using all available avenues in order to satisfy the information needs of the user communities.

## **References**

Fisheries Division n.d. Welcome to the Fisheries Division Ministry of Agriculture, Land and Marine Resources. [Online] Available: [http://cep.unep.org/trini\\_tbgo/fisheries/index.htm](http://cep.unep.org/trini_tbgo/fisheries/index.htm) [17 September 2002].

Institute of Marine Affairs. 1999. Institute of Marine Affairs Trinidad and Tobago. [Online] Available: <http://ima.gov.tt> [17 September 2002]